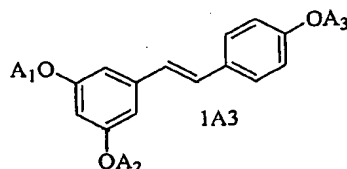


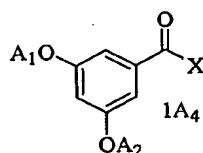
CLAIMS

We claim:

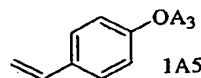
1. A process for preparing a compound of Formula 1A3:



- 5 where A_1 is selected from P_1 and $(CO)R_1$, A_2 is selected from P_2 and $(CO)R_2$, A_3 is selected from P_3 and $(CO)R_3$, where P_1 when present is a first alcohol protecting group, P_2 when present is a second alcohol protecting group, P_3 when present is a third alcohol protecting group, R_1 , R_2 and R_3 when present are each independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers
- 10 of the foregoing, comprising:
coupling a benzoyl halide compound of Formula 1A4

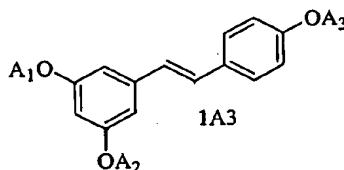


where X is halogen, with a 4-substituted styrene compound of Formula 1A5



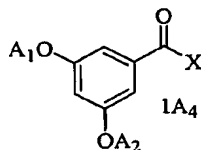
- 15 in solution or in suspension of a first solvent, transition metal catalyst, N-heterocyclic carbene-type ligand and a first base.

2. A process for preparing a compound of Formula 1A3:

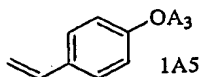


- 20 where A_1 is selected from P_1 and $(CO)R_1$, A_2 is selected from P_2 and $(CO)R_2$, A_3 is selected from P_3 and $(CO)R_3$, where P_1 when present is a first alcohol protecting group, P_2 when present is a second alcohol protecting group, P_3 when present is a third alcohol protecting group, R_1 , R_2 and R_3 when present are each independently

selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:
coupling a benzoyl halide compound of Formula 1A4



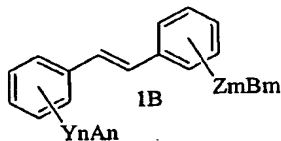
5 where X is halogen, with a 4-substituted styrene compound of Formula 1A5



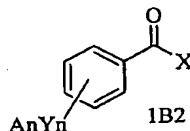
in solution or in suspension of a first solvent, transition metal catalyst, N-heterocyclic carbene-type ligand and a first base.

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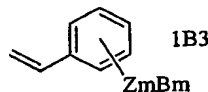
3. A process for preparing a compound of Formula 1B



where Y is independently selected from NH and O, n is equal to 0, 1, 2, 3, 4 or 5, Z is independently selected from NH and O, m is equal to 0, 1, 2, 3, 4 or 5, each A and each B is independently selected from R, P₁, P₂ and P₃ and each R is independently
15 selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing and P₁, P₂ and P₃ are protecting groups, comprising the step of coupling a benzoyl halide compound of Formula 1B2



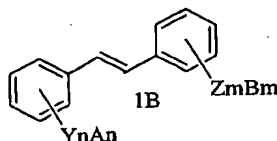
where X is halogen, with styrene compound of Formula 1B3



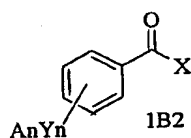
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in solution or in suspension of a first solvent, transition metal catalyst, N-heterocyclic carbene-type ligand and a first base.

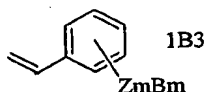
4. A process for preparing a compound of Formula 1B



- where Y is independently selected from NH and O, n is equal to 0, 1, 2, 3, 4 or 5, Z is independently selected from NH and O, m is equal to 0, 1, 2, 3, 4 or 5, each A and each B is independently selected from R, P₁, P₂ and P₃ and each R is independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing and P₁, P₂ and P₃ are protecting groups, comprising the step of coupling a benzoyl halide compound of Formula 1B2

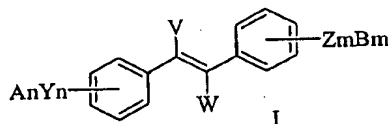


- 10 where X is halogen, with styrene compound of Formula 1B3



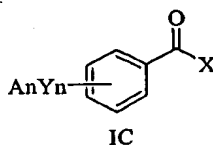
in solution or in suspension of a first solvent, transition metal catalyst, N-heterocyclic carbene-type ligand and a first base.

- 15 5. A process for preparing a compound of Formula I

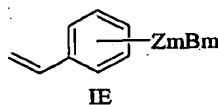


- where each Y is -O or halogen, each Z is -O or halogen, each n is independently the value of 0, 1, 2, 3, 4 or 5, each m is independently the value of 0, 1, 2, 3, 4 or 5, each A is independently selected from P_n, R or absent, each B is independently selected from H, R or absent, each V is independently selected from P_n, straight or branched alkyl of from 1 to 6 carbon atoms and cycloalkyl of from 3 to 8 carbon atoms, alkoxy, phenyl, benzyl or halogen, each W is independently selected from H, straight or branched alkyl of from 1 to 6 carbon atoms and cycloalkyl of from 3 to 8 carbon atoms, alkoxy, phenyl, benzyl or halogen, where R is selected from the group alkyl with at least one carbon atom, aryl and aralkyl, P_n is an alcohol protecting

group and diastereoisomers of the foregoing, comprising the step of coupling a benzoyl halide compound of Formula IC



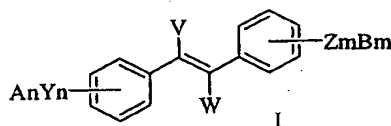
where X is halogen, with a 4-substituted styrene compound of Formula IE



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in solution or in suspension of a first solvent, transition metal catalyst, N-heterocyclic carbene-type ligand and a first base.

6. A process for preparing a compound of Formula I

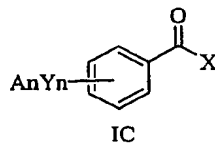


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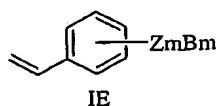
where each Y is -O or halogen, each Z is -O or halogen, each n is independently the value of 0, 1, 2, 3, 4 or 5, each m is independently the value of 0, 1, 2, 3, 4 or 5, each A is independently selected from P_n, R or absent, each B is independently selected from H, R or absent, each V is independently selected from P_n, straight or branched alkyl of from 2 to 6 carbon atoms and cycloalkyl of from 3 to 8 carbon atoms, alkoxy, phenyl, benzyl or halogen, each W is independently selected from H, straight or branched alkyl of from 1 to 6 carbon atoms and cycloalkyl of from 3 to 8 carbon atoms, alkoxy, phenyl, benzyl or halogen, where each R is independently selected from alkyl with at least two carbon atoms, aryl and aralkyl, P_n is an alcohol protecting group and diastereoisomers of the foregoing, comprising the step of coupling a benzoyl halide compound of Formula IC

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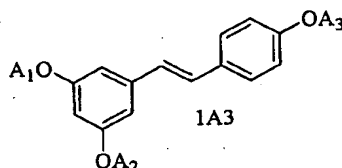


where X is halogen, with a 4-substituted styrene compound of Formula IE



in solution or in suspension of a first solvent, transition metal catalyst, N-heterocyclic carbene-type ligand and a first base.

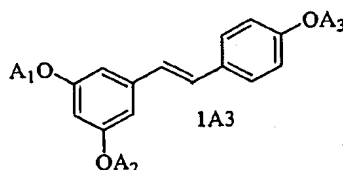
- 5 7. A process for preparing resveratrol from compounds of Formula 1A3



- 10 where A₁ is selected from P₁ and (CO)R₁, A₂ is selected from P₂ and (CO)R₂, A₃ is selected from P₃ and (CO)R₃, where P₁ when present is a first alcohol protecting group, P₂ when present is a second alcohol protecting group, P₃ when present is a third alcohol protecting group, R₁, R₂ and R₃ when present are each independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing, comprising the step or steps:

- 15 (a) reacting said compounds of Formula 1 with a first base in a first solvent; and/or,
 (b) reacting said compounds of Formula 1 with one or more deprotection reactants to remove said alcohol protecting groups P₁, P₂ and P₃.

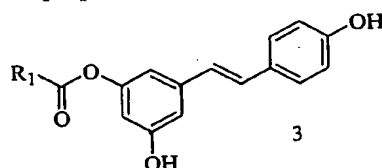
8. A process for preparing resveratrol from compounds of Formula 1A3



- 20 where A₁ is selected from P₁ and (CO)R₁, A₂ is selected from P₂ and (CO)R₂, A₃ is selected from P₃ and (CO)R₃, P₁ when present is a first alcohol protecting group, P₂ when present is a second alcohol protecting group, P₃ when present is a third alcohol protecting group, R₁, R₂ and R₃ when present are each independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the
 25 foregoing, comprising the step or steps:

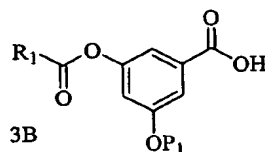
- (a) reacting said compounds of Formula 1 with a first base in a first solvent; and/or,
- (b) reacting said compounds of Formula 1 with one or more deprotection reactants to remove said alcohol protecting groups P₁, P₂ and P₃.

5 9. A process for preparing a compound of Formula 3



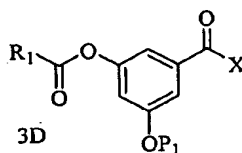
pharmaceutically and cosmetically acceptable salts thereof where R₁ is selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

- 10 (a) esterifying a first alcohol of resorcylic acid with an acylating agent in solution or in suspension of a first solvent;
- (b) reacting a second alcohol of resorcylic acid with a first alcohol protecting agent in solution or in suspension of a second solvent,
- wherein the sequence of steps (a) and (b) are interchangeable, to give the mono-
- 15 ester, mono-protected alcohol of Formula 3B



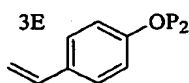
where P₁ is a first alcohol protecting group;

- (c) halogenating said compound of Formula 3B using a halogenating agent in solution or in suspension of a third solvent to give the acid halide of
- 20 Formula 3D

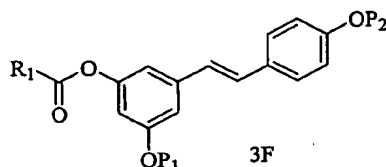


where X is halogen;

- (d) coupling said compound of Formula 3E with a compound of Formula 3D



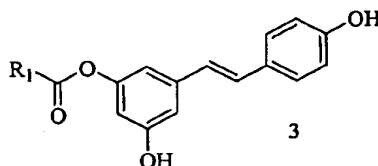
where P_2 is a second alcohol protecting group, with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a fourth solvent to yield a compound of Formula 3F;



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(e) deprotecting said first and second alcohol protecting groups from said compound of Formula 3F to give the compound of Formula 3.

10. A process for preparing a compound of Formula 3

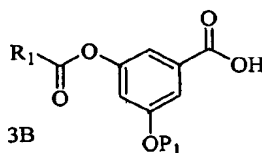


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pharmaceutically and cosmetically acceptable salts thereof where R_1 is selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

(a) esterifying a first alcohol of resorcylic acid with an acylating agent in solution or in suspension of a first solvent;

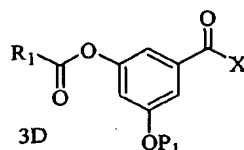
(b) reacting a second alcohol of resorcylic acid with a first alcohol protecting agent in solution or in suspension of a second solvent, wherein the sequence of steps (a) and (b) are interchangeable to give the mono-ester, mono-protected alcohol of Formula 3B



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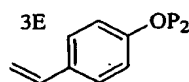
where P_1 is a first alcohol protecting group;

(c) halogenating said compound of Formula 3B using a halogenating agent in solution or in suspension of a third solvent to give the acid halide of Formula 3D

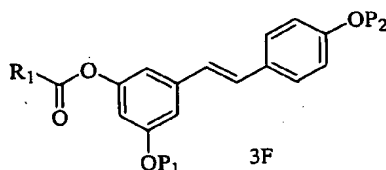


5 where X is halogen;

(d) coupling said compound of Formula 3E with a compound of Formula 3D



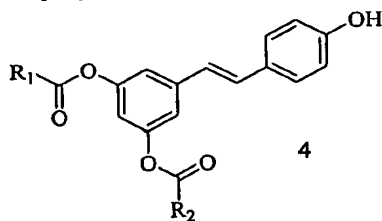
10 where P₂ is a second alcohol protecting group, with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a fourth solvent to yield a compound of Formula 3F;



(e) deprotecting said first and second alcohol protecting groups from said compound of Formula 3F to give the compound of Formula 3.

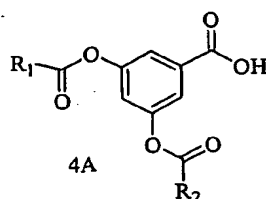
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11. A process for preparing a compound of Formula 4

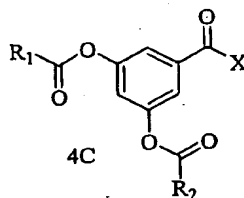


20 pharmaceutically and cosmetically acceptable salts thereof where R₁ and R₂ are independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

(a) esterifying resorcylic acid with an acylating agent in solution or in suspension of a first solvent to give the 3,5-diester of resorcylic acid of Formula 4A;



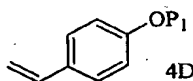
(b) halogenating said compound of Formula 4a using a halogenating agent in solution or in suspension of a second solvent to give the acid halide of Formula 4C



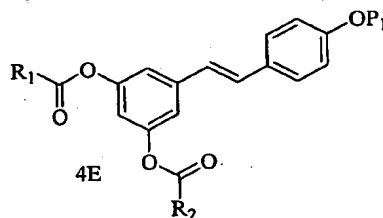
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where X is halogen;

(c) coupling said compound of Formula 4C with a compound of Formula 4D



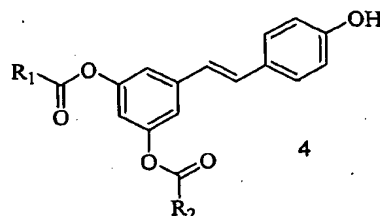
10 where P₃ is a first alcohol protecting group, with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a third solvent to yield a compound of Formula 4E;



(d) deprotecting said first alcohol protecting group from said compound of Formula 4E to give the compound of Formula 4.

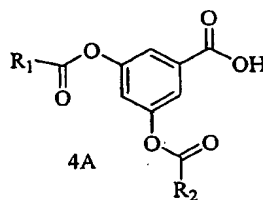
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12. A process for preparing a compound of Formula 4

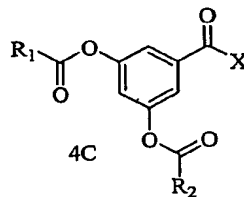


pharmaceutically and cosmetically acceptable salts thereof where R_1 and R_2 are independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

- (a) esterifying resorcylic acid with an acylating agent in solution or in suspension of a first solvent to give the 3,5-diester of resorcylic acid of Formula 4A;

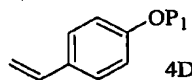


- (b) halogenating said compound of Formula 4a using a halogenating agent in solution or in suspension of a second solvent to give the acid halide of Formula 4C

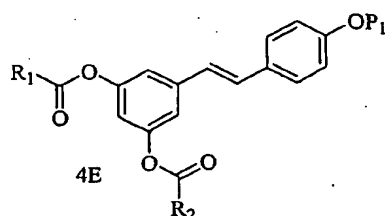


where X is halogen;

- (c) coupling said compound of Formula 4C with a compound of Formula 4D

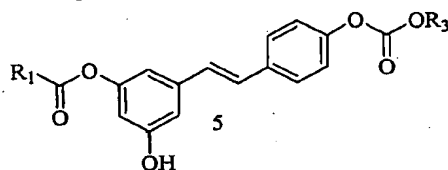


where P_1 is a first alcohol protecting group, with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a third solvent to yield a compound of Formula 4E;



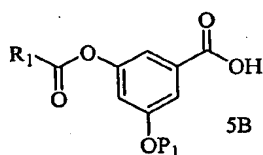
(d) deprotecting said first alcohol protecting group from said compound of Formula 4E to give a compound of said Formula 4.

13. A process for preparing a compound of Formula 5



pharmaceutically and cosmetically acceptable salts thereof where R_1 and R_3 are independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

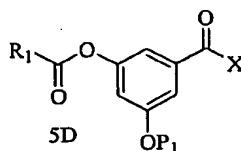
- (a) esterifying a first alcohol of resorcylic acid with an acylating agent in solution or in suspension of a first solvent;
 - (b) reacting a second alcohol of resorcylic acid with a first alcohol protecting agent in solution or in suspension of a second solvent,
- wherein the sequence of steps (a) and (b) are interchangeable to give the mono-ester, mono-protected alcohol of Formula 5B



where P_1 is a first alcohol protecting group;

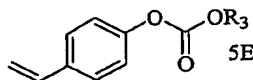
- (c) halogenating said compound of Formula 5B using a halogenating agent in solution or in suspension of a third solvent to give the acid halide of

Formula 5D

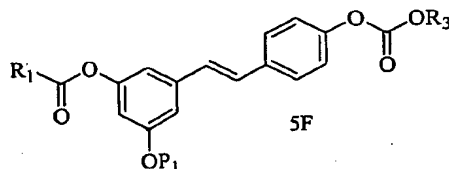


where X is halogen;

- (d) coupling said compound of Formula 5D with a compound of Formula 5E

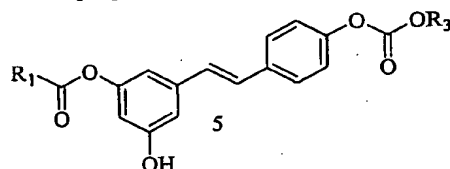


- 5 with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a fourth solvent to yield a compound of Formula 5F;



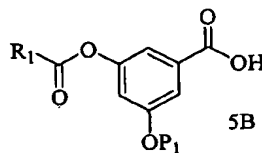
- (e) deprotecting said first and second protecting groups from said compound of Formula 5F to give a compound of said Formula 5.

- 10 14. A process for preparing a compound of Formula 5



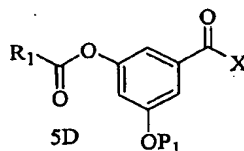
pharmaceutically and cosmetically acceptable salts thereof where R₁ and R₃ are independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

- 15 (a) esterifying a first alcohol of resorcylic acid with an acylating agent in solution or in suspension of a first solvent;
- (b) reacting a second alcohol of resorcylic acid with a first alcohol protecting agent in solution or in suspension of a second solvent,
- wherein the sequence of steps (a) and (b) are interchangeable to give the mono-ester,
- 20 mono-protected alcohol of Formula 5B



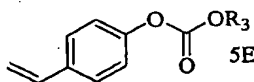
where P₁ is a first alcohol protecting group;

(c) halogenating said compound of Formula 5B using a halogenating agent in solution or in suspension of a third solvent to give the acid halide of Formula 5D

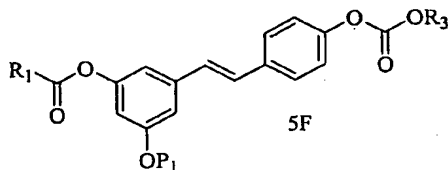


5 where X is halogen;

(d) coupling said compound of Formula 5D with a compound of Formula 5E

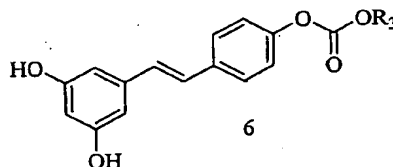


10 with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a fourth solvent to yield a compound of Formula 5F;



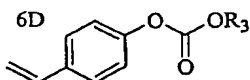
(e) deprotecting said first and second protecting groups from said compound of Formula 5F to give the compound of Formula 5.

15 15. A process for preparing a compound of Formula 6

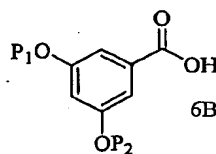


pharmaceutically and cosmetically acceptable salts thereof where R₃ is selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

20 (a) esterifying 4-hydroxy styrene with an acylating agent in solution or in suspension of a first solvent to give the 4-ester styrene of Formula 6D;

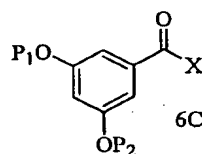


(b) reacting resorcylic acid with an alcohol protecting agent in solution or in suspension of a second solvent to give a compound of Formula 6B



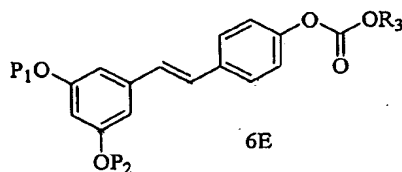
where P₁ is a first alcohol protecting group and P₂ is a second alcohol protecting group;

(c) halogenating said compound of Formula 6B using a halogenating agent in solution or in suspension of a third solvent to give the acid halide of Formula 6C



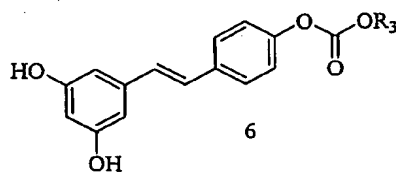
where X is halogen;

(d) coupling said compound of Formula 6C with a compound of Formula 6E with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a fourth solvent to yield a compound of Formula 6E;



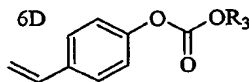
(e) deprotecting said first alcohol protecting group from said compound of Formula 6E to give the compound of Formula 6.

16. A process for preparing a compound of Formula 6

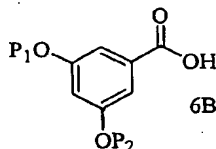


pharmaceutically and cosmetically acceptable salts thereof where R_3 is selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

- (a) esterifying 4-hydroxy styrene with an acylating agent in solution or in suspension of a first solvent to give the 4-ester styrene of Formula 6D;

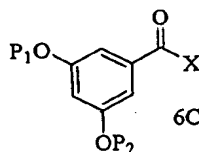


- (b) reacting resorcylic acid with an alcohol protecting agent in solution or in suspension of a second solvent to give a compound of Formula 6B



- 10 where P_1 is a first alcohol protecting group and P_2 is a second alcohol protecting group;

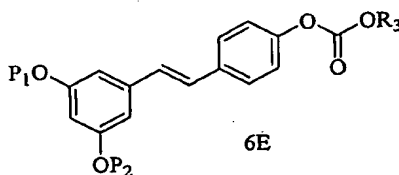
- (c) halogenating said compound of Formula 6B using a halogenating agent in solution or in suspension of a third solvent to give the acid halide of Formula 6C



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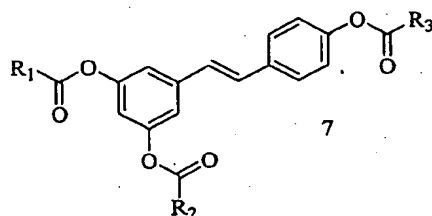
, where X is halogen;

- (d) coupling said compound of Formula 6D with a compound of Formula 6C with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a fourth solvent to yield a compound of Formula 6E;



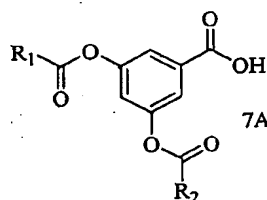
- (e) deprotecting said first alcohol protecting group from said compound of Formula 6E to give the compound of Formula 6.

17. A process for preparing a compound of Formula 7

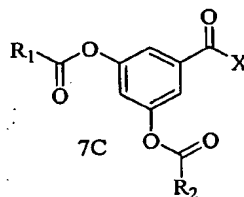


- pharmaceutically and cosmetically acceptable salts thereof where R_1 , R_2 and R_3 are independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

- (a) esterifying resorcylic acid with an acylating agent in solution or in suspension of a first solvent to give the 3,5-diester of resorcylic acid of Formula 7A;

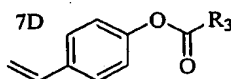


- (b) halogenating said compound of Formula 7A using a halogenating agent in solution or in suspension of a second solvent to give the acid halide of Formula 7C



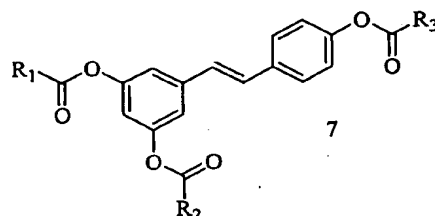
where X is halogen;

- (c) coupling said compound of Formula 7C with a compound of Formula 7D



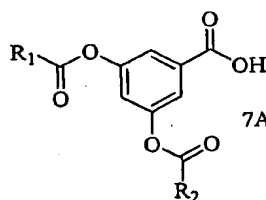
with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a third solvent.

18. A process for preparing a compound of Formula 7

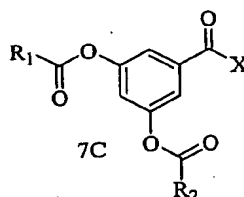


- pharmaceutically and cosmetically acceptable salts thereof where R_1 , R_2 and R_3 are independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing, comprising:

- (a) esterifying resorcylic acid with an acylating agent in solution or in suspension of a first solvent to give the 3,5-diester of resorcylic acid of Formula 7A;

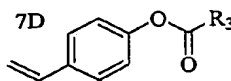


- (b) halogenating said compound of Formula 7A using a halogenating agent in solution or in suspension of a second solvent to give the acid halide of Formula 7C



where X is halogen;

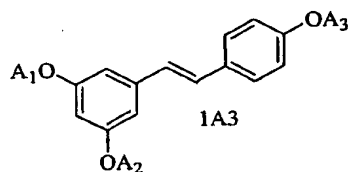
- (c) coupling said compound of Formula 7C with a compound of Formula 7D



with transition metal catalyst, N-heterocyclic carbene-type ligand, and a first base in solution or in suspension of a third solvent.

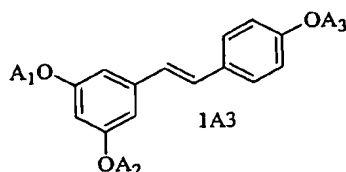
19. A compound of any of Formulas 1A3, 1B, I, 3-7 prepared from any of the processes of claims 1-18.

20. A compound of Formula 9



5 where A_1 is selected from H and $(CO)R_1$, A_2 is selected from H and $(CO)R_2$, A_3 is selected from H and $(CO)R_3$, R_1 , R_2 and R_3 when present are each independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing.

21. A compound of Formula 9



10

where A_1 is selected from H and $(CO)R_1$, A_2 is selected from H and $(CO)R_2$, A_3 is selected from H and $(CO)R_3$, R_1 , R_2 and R_3 when present are each independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing.

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22. A compound selected from the group consisting essentially of:

5,4'-dihydroxy-3-propanoate stilbene, 3,5-dihydroxy-4'-propanoate stilbene, 3,4'-dihydroxy-5-propanoate stilbene, 4'-hydroxy-3,5-dipropanoate stilbene, 5-hydroxy-3,4'-dipropanoate stilbene, 3,5,4'-tripropanoate stilbene,

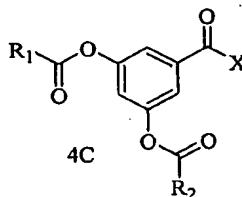
20 5,4'-dihydroxy-3-butanoate stilbene, 3,5-dihydroxy-4'-butanoate stilbene, 3,4'-dihydroxy-5-butanoate stilbene, 4'-hydroxy-3,5-dibutanoate stilbene, 5-hydroxy-3,4'-dibutanoate stilbene, 3,5,4'-tributanoate stilbene, 5,4'-dihydroxy-3-pentanoate stilbene, 3,5-dihydroxy-4'-pentanoate stilbene, 3,4'-dihydroxy-5-pentanoate stilbene, 4'-hydroxy-3,5-dipentanoate stilbene, 5-hydroxy-3,4'-dipentanoate

25 stilbene, 3,5,4'-tripentanoate stilbene, 5,4'-dihydroxy-3-hexanoate stilbene, 3,5-

- dihydroxy-4'-hexanoate stilbene, 3,4'-dihydroxy-5-hexanoate stilbene, 4'-hydroxy-3,5-dihexanoate stilbene, 5-hydroxy-3,4'-dihexanoate stilbene, 3,5,4'-trihexanoate stilbene, 5,4'-dihydroxy-3-(2,4-hexadienoate) stilbene, 3,5-dihydroxy-4'-(2,4-hexadienoate) stilbene, 3,4'-dihydroxy-5-(2,4-hexadienoate) stilbene, 4'-hydroxy-3,5-(2,4-hexadienoate) stilbene, 5-hydroxy-3,4'-(2,4-hexadienoate) stilbene, 3,5,4'-tri-(2,4-hexanoate) stilbene, 5,4'-dihydroxy-3-dodecanoate stilbene, 3,5-dihydroxy-4'-dodecanoate stilbene, 3,4'-dihydroxy-5-dodecanoate stilbene, 4'-hydroxy-3,5-dodecanoate stilbene, 5-hydroxy-3,4'-dodecanoate stilbene, 3,5,4'-tridodecanoate stilbene, 5,4'-dihydroxy-3-hexadecanoate stilbene, 3,5-dihydroxy-4'-hexadecanoate stilbene, 3,4'-dihydroxy-5-hexadecanoate stilbene, 4'-hydroxy-3,5-hexadecanoate stilbene, 5-hydroxy-3,4'-hexadecanoate stilbene, 3,5,4'-trihexadecanoate stilbene, 5,4'-dihydroxy-3-octadecanoate stilbene, 3,5-dihydroxy-4'-octadecanoate stilbene, 3,4'-dihydroxy-5-octadecanoate stilbene, 4'-hydroxy-3,5-octadecanoate stilbene, 5-hydroxy-3,4'-octadecanoate stilbene, 3,5,4'-trioctadecanoate stilbene, 5,4'-dihydroxy-3-(9-octadecenoate) stilbene, 3,5-dihydroxy-4'-(9-octadecenoate) stilbene, 3,4'-dihydroxy-5-(9-octadecenoate) stilbene, 4'-hydroxy-3,5-(9-octadecenoate) stilbene, 5-hydroxy-3,4'-(9-octadecenoate) stilbene, 3,5,4'-tri-(9-octadecenoate) stilbene, 5,4'-dihydroxy-3-(9,12-octadecadienoate) stilbene, 3,5-dihydroxy-4'-(9,12-octadecadienoate) stilbene, 3,4'-dihydroxy-5-(9,12-octadecadienoate) stilbene, 4'-hydroxy-3,5-(9,12-octadecadienoate) stilbene, 5-hydroxy-3,4'-(9,12-octadecadienoate) stilbene, 3,5,4'-tri-(9,12-octadecadienoate) stilbene, 5,4'-dihydroxy-3-(6,9,12-octadecatrienoate) stilbene, 3,5-dihydroxy-4'-(6,9,12-octadecatrienoate) stilbene, 3,4'-dihydroxy-5-(6,9,12-octadecatrienoate) stilbene, 4'-hydroxy-3,5-(6,9,12-octadecatrienoate) stilbene, 5-hydroxy-3,4'-(6,9,12-octadecatrienoate) stilbene, 3,5,4'-tri-(6,9,12-octadecatrienoate) stilbene, 5,4'-dihydroxy-3-(9,12,15-octadecatrienoate) stilbene, 3,5-dihydroxy-4'-(9,12,15-octadecatrienoate) stilbene, 3,4'-dihydroxy-5-(9,12,15-octadecatrienoate) stilbene, 4'-hydroxy-3,5-(9,12,15-octadecatrienoate) stilbene, 5-hydroxy-3,4'-(9,12,15-octadecatrienoate) stilbene, 3,5,4'-tri-(9,12,15-octadecatrienoate) stilbene, 5,4'-dihydroxy-3-(3,6,9-octadecatrienoate) stilbene, 3,5-dihydroxy-4'-(3,6,9-octadecatrienoate) stilbene, 3,4'-dihydroxy-5-(3,6,9-octadecatrienoate) stilbene, 4'-hydroxy-3,5,6,9-octadecatrienoate) stilbene, 5-hydroxy-3,4'-(3,6,9-octadecatrienoate) stilbene, 3,5,4'-tri-(3,6,9-octadecatrienoate) stilbene, 5,4'-

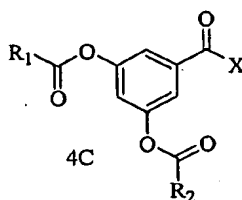
- dihydroxy-3-(5,8,11,14-eicosatetraenoate) stilbene, 3,5-dihydroxy-4'-(5,8,11,14-eicosatetraenoate) stilbene, 3,4'-dihydroxy-5-(5,8,11,14-eicosatetraenoate) stilbene, 4'-hydroxy-3,5-(5,8,11,14-eicosatetraenoate) stilbene, 5-hydroxy-3,4'-(5,8,11,14-eicosatetraenoate) stilbene, 3,5,4'-tri-(5,8,11,14-eicosatetraenoate) stilbene, 5,4'-dihydroxy-3-(5,8,11,14,17-eicosapentaenoate) stilbene, 3,5-dihydroxy-4'-(5,8,11,14,17-eicosapentaenoate) stilbene, 3,4'-dihydroxy-5-(5,8,11,14,17-eicosapentaenoate) stilbene, 4'-hydroxy-3,5-(5,8,11,14,17-eicosapentaenoate) stilbene, 5-hydroxy-3,4'-(5,8,11,14,17-eicosapentaenoate) stilbene, 3,5,4'-tri-(5,8,11,14,17-eicosapentaenoate) stilbene, 5,4'-dihydroxy-3-(4,7,10,13,16,19-docosahexaenoate) stilbene, 3,5-dihydroxy-4'-(4,7,10,13,16,19-docosahexaenoate) stilbene, 3,4'-dihydroxy-5-(4,7,10,13,16,19-docosahexaenoate) stilbene, 4'-hydroxy-3,5-(4,7,10,13,16,19-docosahexaenoate) stilbene, 5-hydroxy-3,4'-(4,7,10,13,16,19-docosahexaenoate) stilbene, 3,5,4'-tri-(4,7,10,13,16,19-docosahexaenoate) stilbene.

23. A compound of Formula 4C



where X is halogen, R₁ and R₂ are each independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing.

24. A compound of Formula 4C

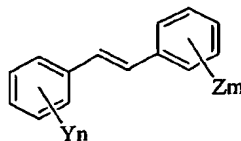


where X is halogen, R₁ and R₂ are each independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing.

- di-octadecanoate benzoyl bromide, 3,5-di-octadecanoate benzoyl iodide, 3,5-di-(9-octadecenoate) benzoyl chloride, 3,5-di-(9-octadecenoate) benzoyl bromide, 3,5-di-(9-octadecenoate) benzoyl iodide, 3,5-di-(9,12-octadecadienoate) benzoyl chloride, 3,5-di-(9,12-octadecadienoate) benzoyl bromide, 3,5-di-(9,12-octadecadienoate) benzoyl iodide, 3,5-di-(6,9,12-octadecatrienoate) benzoyl chloride, 3,5-di-(6,9,12-octadecatrienoate) benzoyl bromide, 3,5-di-(6,9,12-octadecatrienoate) benzoyl iodide, 3,5-di-(9,12,15-octadecatrienoate) benzoyl chloride, 3,5-di-(9,12,15-octadecatrienoate) benzoyl bromide, 3,5-di-(9,12,15-octadecatrienoate) benzoyl iodide, 3,5-di-(3,6,9-octadecatrienoate) benzoyl chloride, 3,5-di-(3,6,9-octadecatrienoate) benzoyl bromide, 3,5-di-(3,6,9-octadecatrienoate) benzoyl iodide, 3,5-di-(5,8,11,14-eicosatetraenoate) benzoyl chloride, 3,5-di-(5,8,11,14-eicosatetraenoate) benzoyl bromide, 3,5-di-(5,8,11,14-eicosatetraenoate) benzoyl iodide, 3,5-di-(5,8,11,14,17-eicosapentaenoate) benzoyl chloride, 3,5-di-(5,8,11,14,17-eicosapentaenoate) benzoyl bromide, 3,5-di-(5,8,11,14,17-eicosapentaenoate) benzoyl iodide, 3,5-di-(4,7,10,13,16,19-docosahexaenoate) benzoyl chloride, 3,5-di-(4,7,10,13,16,19-docosahexaenoate) benzoyl bromide, and 3,5-di-(4,7,10,13,16,19-docosahexaenoate) benzoyl iodide.

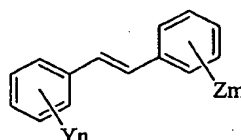
28. A compound selected from the group consisting essentially of:
 3,5,-diacetoxy benzoyl chloride, 3,5,-diacetoxy benzoyl bromide, 3,5,-diacetoxy benzoyl iodide, 3-acetoxy-5-levulinoxy benzoyl chloride, 3-acetoxy-5-levulinoxy benzoyl bromide, 3-acetoxy-5-levulinoxy benzoyl iodide, 3-acetoxy-5-(methoxymethoxy) benzoyl chloride, 3-acetoxy-5-(methoxymethoxy) benzoyl bromide, 3-acetoxy-5-(methoxymethoxy) benzoyl iodide, 3-(levulinoxy)-5-(methoxymethoxy) benzoyl chloride, 3-(levulinoxy)-5-(methoxymethoxy) benzoyl bromide, 3-(levulinoxy)-5-(methoxymethoxy) benzoyl iodide, 3,5-bis(levulinoxy) benzoyl chloride, 3,5-bis(levulinoxy) benzoyl bromide, 3,5-bis(levulinoxy) benzoyl iodide, 3,5-bis(methoxymethoxy) benzoyl chloride, 3,5-bis(methoxymethoxy) benzoyl bromide, and 3,5-bis(methoxymethoxy) benzoyl iodide.

29. A compound of the formula



where each Y is independently selected from O(CO)R and halogen, n is equal to 0, 1, 2, 3, 4 or 5, Z is independently selected from O(CO)R and halogen, m is equal to 0 1, 2, 3, 4 or 5, the sum of n and m is 1 or more, each R is independently selected from alkyl with at least one carbon atom, aryl, aralkyl, and diastereoisomers of the foregoing.

30. A compound of the formula



where each Y is independently selected from O(CO)R and halogen, n is equal to 0, 1, 2, 3, 4 or 5, Z is independently selected from O(CO)R and halogen, m is equal to 0, 1, 2, 3, 4 or 5, the sum of n and m is 1 or more, each R is independently selected from alkyl with at least two carbon atoms, aryl, aralkyl, and diastereoisomers of the foregoing.

31. A compound according to claim 29 selected from the group consisting essentially of: 3,5,4'-trifluorostillbene, 4'-acetoxy-3,5-difluorostillbene, 3,5-difluoro-4'-hydroxystillbene, 3,5-diacetoxy-4'-fluorostillbene, 4'-fluoro-3,5-dihydroxystillbene, 3, 4'-difluoro-5-hydroxystillbene, and 3-fluoro-5,4'-dihydroxystillbene.

32. The processes according to any of claims 1-18 where X is Cl.

33. The processes according to any of claims 1-18 where said first base is a non-coordinating amine base.

34. The processes according to any of claims 1-18 where said first base is a non-coordinating amine base selected from the group consisting of: N,N-dimethylbenzylamine, N-methylmorpholine, and dimethylaminopyridine.

35. The processes according to any of claims 1-18 where said first base is
5 N,N-dimethylbenzylamine.

36. The processes according to any of claims 1-18 where said N-heterocyclic carbene-type ligand is selected from imidazolium, 1,3-disubstituted imidazolium, 1,3-disubstituted-4,5-dihydroimidazolium carbene-type ligands.

37. The processes according to any of claims 1-18 where said N-
10 heterocyclic carbene-type ligand is N,N'-bis-carbocycle imidazolium ligands.

38. The processes according to any of claims 1-18 where said N-heterocyclic carbene-type ligand is selected from N,N'-bis-(2,6-diisopropylphenyl) imidazolium chloride, N,N'-bis-(dimesityl) imidazolium chloride and N,N'-bis-adamantylimidazolium chloride.

39. The processes according to any of claims 1-18 where said
15 halogenating agent is selected from the group consisting essentially of: thionyl chloride, thionyl bromide, thionyl iodide, oxalyl chloride, oxalyl bromide, and oxalyl iodide.

40. The processes according to any of claims 1-18 where said
20 halogenating agent is thionyl chloride.

41. The processes according to any of claims 1-18 where said halogenating agent is oxalyl chloride.

42. The processes according to any of claims 1-18 where said acylating agent is selected from the group consisting essentially of: ester anhydrides, mixed
25 ester anhydrides, and acid halides.

43. The processes according to any of claims 1-18 where said acylating agent is acetic anhydride.

44. The processes according to any of claims 1-18 where said first protecting agent is selected from the group consisting of: MOM, and lev.

5 45. The processes according to any of claims 1-8, 11-14, and 17-19 where said second protecting agent is selected from the group consisting of: MOM, and lev.

46. The process according to any of claims 1 and 2 where said first base is selected from the group consisting essentially of: lithium hydroxide, sodium
10 hydroxide, potassium hydroxide, and pyridine.

47. The processes according to any of claims 1-18 comprising the step of irradiating said compound with ultraviolet light in an inert solvent.

48. The processes according to any of claims 1-18 where said transition metal catalyst is a Pd II catalyst selected from the group consisting of: Pd(OAc)₂,
15 PdBr₂, and PdCl₂.

49. The processes according to any of claims 1-18 where said Pd II catalyst is Pd(OAc)₂.

50. The processes according to any of claim 1-18 where the deprotection reagents are selected from the group consisting of: sodium sulfite and sodium
20 thiosulfite, aqueous pyridine at pH 6.7, NaI and TMSCl, alkaline earth metal hydroxide and a polar aprotic solvent.

51. The composition of claims 21 and 29 further comprising a therapeutically effective amount of said compound of Formula 1 in admixture with a pharmaceutically acceptable carrier.

52. The composition of claims 21 and 29 further comprising a cosmetically effective amount of said compound of Formula 1 in admixture with a cosmetically acceptable carrier are described.

53. The composition of claims 21 and 29 with mammalian enzymes
5 including SIRT1 promoting cell survival.

54. The composition of claims 21 and 29 further comprising a nutritionally effective amount of said compound of Formula 1 in admixture with a nutritionally acceptable carrier.